

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) An automatic door reciprocating system for use with a wheelchair lift designed to be stowed in a lower compartment of a vehicle, the vehicle having a floor and a sliding door, the sliding door being slidable between open and closed positions, the wheelchair lift having a platform which is movable between an upper position, where the platform is substantially coplanar with the floor, and a lower position, the automatic door reciprocating system comprising:

a reciprocating assembly for automatically reciprocating the sliding door between the open and closed positions, the reciprocating assembly comprising:

- (a) a latch assembly operable to latch and unlatch a sliding door;
- (b) a plug assembly operable to actuate the sliding door between a plugged position and an unplugged position by rotating the sliding door about a pivot axis;
- (c) a drive assembly operable to reciprocate the sliding door between the open position and the closed position; and
- (d) sensor means for sensing whether the sliding door is in the plugged or unplugged positions.

2. (Previously Presented) An automatic door reciprocating assembly adaptable for use with a wheelchair lift designed to be stowed in a vehicle having a floor and a door, the door being reciprocable between an open and a closed position, the wheelchair lift having a lift platform that is movable between an upper position, wherein the lift platform is substantially coplanar with the floor, and a lower position, wherein the lift platform is accessible by a wheelchair-bound person located outside of the vehicle, the automatic door reciprocating assembly comprising:

- (a) a latch assembly operable to latch and unlatch a door; and

(b) a plug assembly operable to actuate the door between a plugged position and an unplugged position by rotating the door about a pivot axis.

3. (Previously Presented) The automatic door reciprocating assembly of Claim 2, wherein the plug assembly first rotates the door about the pivot axis and then permits the door to be reciprocated into the open position.

4. (Previously Presented) The automatic door reciprocating assembly of Claim 2, wherein the plug assembly comprises a first arm extending outward from a pivot point, wherein the first arm is rotatable about the pivot point between a first position, wherein the door is in the plugged position, and a second position, wherein the first arm engages and pivots the door about the pivot axis between the plugged position and the unplugged position.

5. (Previously Presented) The automatic door reciprocating assembly of Claim 4, wherein one end of the first arm is adaptable to slidably engage a guide rail attached to the door to guide the door as the door reciprocates between the open position and the closed position.

6. (Previously Presented) The automatic door reciprocating assembly of Claim 4, further comprising a handle coupled to the first arm, wherein the handle is operable to manually rotate the first arm between the first position and the second position.

7. (Previously Presented) The automatic door reciprocating assembly of Claim 4, further comprising an actuator coupled to the first arm, wherein the actuator is operable to automatically rotate the first arm between the first position and the second position.

8. (Previously Presented) The automatic door reciprocating assembly of Claim 7, wherein the actuator is operable to be selectively decoupled from the first arm to allow the first arm to rotate independently of the actuator.

9. (Previously Presented) The automatic door reciprocating assembly of Claim 4, wherein the latch assembly is positioned to selectively latch the first arm in the first position.

10. (Previously Presented) The automatic door reciprocating assembly of Claim 2, further comprising a door controller in communication with the latch assembly to selectively control operation of the latch assembly to permit activation of the door between the open position and the closed position in response to a command signal from the door controller.

11. (Previously Presented) The automatic door reciprocating assembly of Claim 2, further comprising a door controller in communication with the plug assembly to selectively control operation of the plug assembly to permit activation of the door between the open position and the closed position in response to a command signal from the door controller.

12. (Previously Presented) The automatic door reciprocating assembly of Claim 2, further comprising a door controller in communication with a drive assembly to selectively control operation of the drive assembly to permit activation of the door between the open position and the closed position in response to a command signal from the door controller.

13. (Previously Presented) The automatic door reciprocating mechanism of Claim 2, further comprising a drive assembly operable to reciprocate the door between the open and closed positions.

14. (Previously Presented) The automatic door reciprocating assembly of Claim 13, wherein the drive assembly comprises a driven member coupled to the door to reciprocate the door between the open position and the closed position.

15. (Previously Presented) The automatic door reciprocating assembly of Claim 14, wherein the door is coupled to the driven member by a coupler, wherein the coupler is operable to be selectively decoupled from the driven member to allow the door to be manually reciprocated between the open position and the closed position.

16. (Previously Presented) The automatic door reciprocating assembly of Claim 14, wherein the driven member includes a belt.

17. (Previously Presented) The automatic door reciprocating assembly of Claim 14, further comprising an engagement mechanism that engages the driven member, wherein when a load present in the driven member exceeds a predetermined amount, the engagement member is displaced, activating a switch operable to impede the further reciprocation of the door.

18. (Previously Presented) The automatic door reciprocating assembly of Claim 2, wherein the plug assembly comprises a shaft having first and second arms, wherein the shaft is rotatable between a first position and a second position, wherein when the shaft is in the first position, the door is in the plugged position, and when the shaft is rotated from the first position to the second position, the first and second arms engage and pivot the door about the pivot axis between the plugged position and the unplugged position.

19. (Previously Presented) The automatic door reciprocating assembly of Claim 2, further comprising plug sensor means for sensing whether the door is in the plugged or unplugged position.

20. (Previously Presented) The automatic door reciprocating assembly of Claim 19, wherein the plug sensor means comprises a first sensor and a second sensor, the first sensor sensing whether the door is in the plugged position, and the second sensor sensing whether the door is in the unplugged position.

21. (Previously Presented) The automatic door reciprocating assembly of Claim 2, further comprising latch sensor means for sensing if the door is in the latched position.

22. (Previously Presented) The automatic door reciprocating assembly of Claim 2, further comprising door sensor means for sensing if the door is in the open or closed position.

23. (Previously Presented) The automatic door reciprocating assembly of Claim 2, wherein the door sensor means comprises a third sensor and a fourth sensor, the third sensor

sensing whether the door is in the open position, and the fourth sensor sensing whether the door is in the closed position.

24. (Previously Presented) An automatic door reciprocating assembly adaptable for opening and closing a door of a vehicle, the automatic door reciprocating assembly comprising:

(a) a plug assembly operable to actuate the door between a plugged position and an unplugged position by rotating the door about a pivot axis, wherein the plug assembly guides movement of the door as the door is reciprocated between an open position and a closed position;

(b) a latch assembly selectively actuatable between a latched position, where a portion of the latch assembly engages a portion of the plug assembly to impede the plug assembly from unplugging the door, and an unlatched position; and

(c) a drive assembly operable to reciprocate the door between an open position and a closed position.

25. (Previously Presented) The automatic door reciprocating assembly of Claim 24, wherein the plug assembly comprises a guide member positioned to reciprocate within a guide track attached to the door as the door is reciprocated between the open and closed positions.

26. (Previously Presented) The automatic door reciprocating assembly of Claim 24, further comprising an actuator coupled to the plug assembly for rotating a portion of the plug assembly.

27. (Previously Presented) The automatic door reciprocating assembly of Claim 26, further comprising a release device for selectively decoupling the plug assembly from the actuator to allow manual rotation of the door between the plugged and unplugged position.

28. (Previously Presented) The automatic door reciprocating assembly of Claim 24, further comprising a door controller in communication with the latch assembly to selectively

control operation of the latch assembly to permit reciprocation of the door between the open and closed positions.

29. (Previously Presented) The automatic door reciprocating assembly of Claim 24, wherein the drive assembly comprises a driven member coupled to the door to reciprocate the door between the open and closed positions.

30. (Previously Presented) The automatic door reciprocating assembly of Claim 29, wherein the door is coupled to the driven member by a releasable fastener, wherein the releasable fastener is selectively operable to decouple the driven member from the door, and allow the door to be manually reciprocated between the open and closed positions.

31. (Previously Presented) The automatic door reciprocating assembly of Claim 24, further comprising plug sensor means for sensing whether the door is in the plugged or unplugged position.

32. (Previously Presented) The automatic door reciprocating assembly of Claim 31, wherein the plug sensor means comprises a first sensor and a second sensor, the first sensor sensing whether the door is in the plugged position, and the second sensor sensing whether the door is in the unplugged position.

33. (Previously Presented) The automatic door reciprocating assembly of Claim 24, further comprising latch sensor means for sensing whether the door is in the latched position.

34. (Previously Presented) The automatic door reciprocating assembly of Claim 24, further comprising door sensor means for sensing whether the door is in the open or closed position.

35. (Previously Presented) The automatic door reciprocating assembly of Claim 34, wherein the door sensor means comprises a third sensor and a fourth sensor, the third sensor

sensing whether the door is in the open position, and the fourth sensor sensing whether the door is in the closed position.

36. (Previously Presented) The automatic door reciprocating assembly of Claim 24, further comprising a controller in communication with the latch assembly, the drive assembly, and the plug assembly and operable to automatically control operation of the latch assembly, the drive assembly, and the plug assembly.

37. (Previously Presented) An automatic door reciprocating assembly adaptable for opening and closing a door of a vehicle, the automatic door reciprocating assembly comprising:

- (a) a latch assembly operable to latch and unlatch a door;
- (b) a plug assembly operable to actuate the door between a plugged position and an unplugged position by rotating the door about a pivot axis; and
- (c) a controller in communication with the latch assembly, and the plug assembly and operable to automatically control operation of the latch assembly and the plug assembly.

38. (Previously Presented) The automatic door reciprocating assembly of Claim 37, wherein the plug assembly comprises a guide member positioned to reciprocate within a guide track attached to the door as the door is reciprocated between the open and closed positions.

39. (Previously Presented) The automatic door reciprocating assembly of Claim 37, further comprising an actuator coupled to the plug assembly for rotating a portion of the plug assembly.

40. (Previously Presented) The automatic door reciprocating assembly of Claim 39, further comprising a release device for selectively decoupling the plug assembly from the actuator to allow manual rotation of the door between the plugged and unplugged positions.

41. (Previously Presented) The automatic door reciprocating assembly of Claim 37, further comprising a drive assembly operable to reciprocate the door between an open position and a closed position.

42. (Previously Presented) The automatic door reciprocating assembly of Claim 41, wherein the drive assembly comprises a driven member coupled to the door to reciprocate the door between the open and closed positions.

43. (Previously Presented) The automatic door reciprocating assembly of Claim 42, wherein the door is coupled to the driven member by a releasable fastener, wherein the releasable fastener is selectively operable to decouple the driven member from the door, and allow the door to be manually reciprocated between the open and closed positions.

44. (Previously Presented) The automatic door reciprocating assembly of Claim 37, further comprising a first sensor and a second sensor, the first sensor sensing whether the door is in the plugged position, and the second sensor sensing whether the door is in the unplugged position.

45. (Previously Presented) The automatic door reciprocating assembly of Claim 37, further comprising a latch sensor for sensing whether the door is in the latched position.

46. (Previously Presented) The automatic door reciprocating assembly of Claim 37, further comprising a third sensor and a fourth sensor, the third sensor sensing whether the door is in the open position, and the fourth sensor sensing whether the door is in the closed position.

47. (Previously Presented) An automatic door reciprocating assembly adaptable for opening and closing a door of a vehicle, the automatic door reciprocating assembly comprising:

- (a) latch means for latching and unlatching a door; and
- (b) rotation means for rotating the door about a pivot axis to actuate the door between a plugged and an unplugged position.

48. (Previously Presented) The automatic door reciprocating assembly of Claim 47, wherein the rotation means comprises a first arm that rotates about a pivot point to engage and transition the door between the plugged and unplugged positions.

49. (Previously Presented) The automatic door reciprocating assembly of Claim 48, further comprising a second arm that extends outward from a shaft coupled to the first arm, wherein when the shaft is rotated from a first position to a second position, the first and second arms engage and transition the door between the plugged and unplugged positions.

50. (Previously Presented) The automatic door reciprocating assembly of Claim 48, further comprising a plate, wherein the first arm is coupled to the plate and the latch means engages the plate when the latch means is in a latched position, thereby impeding the rotation of the plate and the first arm.

51. (Previously Presented) The automatic door reciprocating assembly of Claim 48, further comprising a rotation mechanism coupled to the first arm, wherein the rotation mechanism is manually operable to rotate the first arm.

52. (Previously Presented) The automatic door reciprocating assembly of Claim 48, further comprising an actuator coupled to the first arm, wherein the actuator is operable to automatically rotate the first arm.

53. (Previously Presented) The automatic door reciprocating assembly of Claim 52, wherein the actuator is operable to be selectively decoupled from the first arm to allow the first arm to rotate independently of the actuator.

54. (Previously Presented) The automatic door reciprocating assembly of Claim 47, further comprising reciprocation means for reciprocating the door between an open position and a closed position.

55. (Previously Presented) The automatic door reciprocating assembly of Claim 54, wherein the reciprocating means comprises a driven member coupled to the door by a coupler, wherein the coupler is operable to selectively decouple the driven member from the door to allow the door to be manually reciprocated between the open and closed positions.

56. (Previously Presented) The automatic door reciprocating assembly of Claim 54, further comprising plug sensor means for sensing whether the door is in the plugged or unplugged position.

57. (Previously Presented) The automatic door reciprocating assembly of Claim 56, further comprising latch sensor means for sensing if the door is in the latched position.

58. (Previously Presented) The automatic door reciprocating assembly of Claim 57, further comprising door sensor means for sensing if the door is in the open or closed position.

59. (Previously Presented) An automatic door reciprocating assembly adaptable for use with a wheelchair lift designed to be stowed in a vehicle having a floor and a door, the door being reciprocable between an open and a closed position, the wheelchair lift having a lift platform that is movable between an upper position, wherein the lift platform is substantially coplanar with the floor, and a lower position, wherein the lift platform is accessible by a wheelchair-bound person located outside of the vehicle, the automatic door reciprocating assembly comprising:

- (a) a latch assembly operable to latch and unlatch a door; and
- (b) a plug assembly operable to actuate the door between a plugged position and an unplugged position by rotating the door about a pivot axis, wherein the plug assembly comprises a first arm extending outward from a pivot point, wherein the first arm is rotatable about the pivot point between a first position, wherein the door is in the plugged position, and a

second position, wherein the first arm engages and pivots the door about the pivot axis between the plugged position and the unplugged position; and

(c) a handle coupled to the first arm, wherein the handle is operable to manually rotate the first arm between the first position and the second position.

60. (Previously Presented) The automatic door reciprocating assembly of Claim 59, further comprising an actuator coupled to the first arm, wherein the actuator is operable to automatically rotate the first arm between the first position and the second position, wherein the actuator is operable to be selectively decoupled from the first arm to allow the first arm to rotate independently of the actuator.

61. (Previously Presented) The automatic door reciprocating mechanism of Claim 59, further comprising a drive assembly operable to reciprocate the door between the open and closed positions, wherein the drive assembly comprises a driven member coupled to the door to reciprocate the door between the open position and the closed position, wherein the door is coupled to the driven member by a coupler, and wherein the coupler is operable to be selectively decoupled from the driven member to allow the door to be manually reciprocated between the open position and the closed position.

62. (Previously Presented) An automatic door reciprocating assembly adaptable for use with a wheelchair lift designed to be stowed in a vehicle having a floor and a door, the door being reciprocable between an open and a closed position, the wheelchair lift having a lift platform that is movable between an upper position, wherein the lift platform is substantially coplanar with the floor, and a lower position, wherein the lift platform is accessible by a wheelchair-bound person located outside of the vehicle, the automatic door reciprocating assembly comprising:

(a) a latch assembly operable to latch and unlatch a door; and

(b) a plug assembly operable to actuate the door between a plugged position and an unplugged position by rotating the door about a pivot axis, wherein the plug assembly comprises a first arm extending outward from a pivot point, wherein the first arm is rotatable about the pivot point between a first position, wherein the door is in the plugged position, and a second position, wherein the first arm engages and pivots the door about the pivot axis between the plugged position and the unplugged position; and

(c) an actuator coupled to the first arm, wherein the actuator is operable to automatically rotate the first arm between the first position and the second position, wherein the actuator is operable to be selectively decoupled from the first arm to allow the first arm to rotate independently of the actuator.

63. (Previously Presented) The automatic door reciprocating assembly of Claim 62, further comprising a handle coupled to the first arm, wherein the handle is operable to manually rotate the first arm between the first position and the second position.

64. (Previously Presented) The automatic door reciprocating mechanism of Claim 62, further comprising a drive assembly operable to reciprocate the door between the open and closed positions, wherein the drive assembly comprises a driven member coupled to the door to reciprocate the door between the open position and the closed position, and wherein the door is coupled to the driven member by a coupler, wherein the coupler is operable to be selectively decoupled from the driven member to allow the door to be manually reciprocated between the open position and the closed position.

65. (Previously Presented) An automatic door reciprocating assembly adaptable for use with a wheelchair lift designed to be stowed in a vehicle having a floor and a door, the door being reciprocable between an open and a closed position, the wheelchair lift having a lift platform that is movable between an upper position, wherein the lift platform is substantially

coplanar with the floor, and a lower position, wherein the lift platform is accessible by a wheelchair-bound person located outside of the vehicle, the automatic door reciprocating assembly comprising:

- (a) a latch assembly operable to latch and unlatch a door; and
- (b) a plug assembly operable to actuate the door between a plugged position and an unplugged position by rotating the door about a pivot axis; and
- (c) a drive assembly operable to reciprocate the door between the open and closed positions, wherein the drive assembly comprises a driven member coupled to the door to reciprocate the door between the open position and the closed position, and wherein the door is coupled to the driven member by a coupler, wherein the coupler is operable to be selectively decoupled from the driven member to allow the door to be manually reciprocated between the open position and the closed position.

66. (Previously Presented) The automatic door reciprocating assembly of Claim 65, wherein the plug assembly comprises a first arm extending outward from a pivot point, wherein the first arm is rotatable about the pivot point between a first position, wherein the door is in the plugged position, and a second position, wherein the first arm engages and pivots the door about the pivot axis between the plugged position and the unplugged position.

67. (Previously Presented) The automatic door reciprocating assembly of Claim 66, further comprising a handle coupled to the first arm, wherein the handle is operable to manually rotate the first arm between the first position and the second position.

68. (Previously Presented) The automatic door reciprocating assembly of Claim 66, further comprising an actuator coupled to the first arm, wherein the actuator is operable to automatically rotate the first arm between the first position and the second position, wherein the

actuator is operable to be selectively decoupled from the first arm to allow the first arm to rotate independently of the actuator.

69. (Previously Presented) The automatic door reciprocating system of Claim 1, wherein the pivot axis is substantially restrained from movement when the plug assembly rotates the door between the plugged and unplugged positions.

70. (Previously Presented) The automatic door reciprocating assembly of Claim 2, wherein the pivot axis is substantially restrained from movement when the plug assembly rotates the door between the plugged and unplugged positions.

71. (Previously Presented) The automatic door reciprocating assembly of Claim 24, wherein the pivot axis is substantially restrained from movement when the plug assembly rotates the door between the plugged and unplugged positions.

72. (Previously Presented) The automatic door reciprocating assembly of Claim 37, wherein the pivot axis is substantially restrained from movement when the plug assembly rotates the door between the plugged and unplugged positions.

73. (Previously Presented) The automatic door reciprocating assembly of Claim 47, wherein the pivot axis is substantially restrained from movement when the plug assembly rotates the door between the plugged and unplugged positions.

74. (New) The automatic door reciprocating system of Claim 1, further including a guide assembly for guiding movement of an upper portion of the sliding door between the open and closed positions, the guide assembly including a front guide member for guiding movement of a front edge of the sliding door and a rear guide member for guiding a rear edge of the sliding door, wherein the front and rear guide members are inclined relative to one another.

75. (New) The automatic door reciprocating assembly of Claim 2, further including a guide assembly for guiding movement of an upper portion of the door between the open and

closed positions, wherein the guide assembly includes a front guide member for guiding a front portion of the door during opening and a rear guide member for guiding a rear portion of the door during opening, wherein the front guide member is inclined relative to the rear guide member.

76. (New) The automatic door reciprocating assembly of Claim 24, further including a guide assembly for guiding movement of the door between the open and closed positions, the guide assembly including a front guide member for guiding movement of a front edge of the door and a rear guide member for guiding a rear edge of the door, wherein the front and rear guide members remain stationary during movement of the door between the open and closed positions.

77. (New) The automatic door reciprocating assembly of Claim 37, wherein the plug assembly is operable to actuate the door between a plugged position and an unplugged position by rotating the door such that the door pivots to transition the door from a plugged position in which a front edge and a rear edge of the door are disposed in an opening in a wall of the vehicle and an unplugged position wherein the rear edge is disposed outside the opening and the front edge remains within the opening.

78. (New) The automatic door reciprocating assembly of Claim 47, further including guide means for guiding movement of an upper portion of the door between the open and closed positions, the guide means including a front guide means for guiding movement of a front edge of the door in a first direction and a rear guide means for guiding a rear edge of the door in a second direction inclined to the first direction as the door moves between the open and closed positions.